AUTHOR INDEX

A

Abbott-Brown, D., *See* Raugi, Mumby, Abbott-Brown, and Bornstein.
Abmayr, S. M., *See* Hill, Mott, Burnett, Abmayr, Lowenhaupt, and Elgin.
Agabian, N., *See* Smit and Agabian.
A'Hearn, E., *See* Hayman, Engvall, A'Hearn, Barnes, Pierschbacher, and Ruoslahti.
Alavi, N., *See* Chung, Alavi, Livingston, Hiller, and Taub.
Anderson, R. G. W., *See* Carpentier, Gorden, Anderson, Goldstein, Brown, Cohen, and Orci.
Andreassen, R., *See* Haugli, Andreassen, and Funderud.
Andrews, M. L., *See* Nelson, Andrews, and Karnovsky.
Arvan, P., and Castle, J. D. Plasma membrane of the rat parotid gland: preparation and partial characterization of a fraction containing the secretory surface. 8.
Aubin, J. E., *See* Beertsen, Heersche, and Aubin.
Autilio-Gambetti, L., *See* Papasozomenos, Yoon, Crane, Autilio-Gambetti, and Gambetti.

B

Bader, D., Masaki, T., and Fischman, D. A. Immunochemical analysis of myosin heavy chain during avian myogenesis in vivo and in vitro. 763.
Balazovich, K., *See* Bourguignon, Nagpal, Balazovich, Guerriero, and Means.
Barak, L. S., and Webb, W. W. Diffusion of low density lipoprotein-receptor complex on human fibroblasts. 846.
Barnes, D., *See* Hayman, Engvall, A'Hearn, Barnes, Pierschbacher, and Ruoslahti.
Barondes, S. H., *See* Shadle and Barondes.
Bartelt, D. C., Carlin, R. K., Scheele, G. A., and Cohen, W. D. Cytoskeletal system of nucleated erythrocytes. II. Presence of a high molecular weight calmodulin-binding protein. 278.
Baumann, H., and Eldredge, D. Dexamethasone increases the synthesis and secretion of a partially active fibronectin in rat hepatoma cells. 29.
Beertsen, W., Heersche, J. N. M., and Aubin, J. E. Free and polymerized tubulin in cultured bone cells and Chinese hamster ovary cells: the influence of cold and hormones. 387.
Bell, E., *See* Soranno and Bell.
Bergmann, J. S., *See* Carney and Bergmann.
Berke, G., *See* Geiger, Rosen, and Berke.
Bernstein, I. A., *See* Zieske and Bernstein.
Black, M. M., and Greene, L. A. Changes in the colchicine susceptibility of microtubules associated with neurite outgrowth: studies with nerve growth factor-responsive PC12 Pheochromocytoma cells. 379.
Blobel, G., *See* Gilmore, Blobel, and Walter.
—, *See* Gilmore, Walter, and Blobel.
Bond, M., and Somlyo, A. V. Dense bodies and actin polarity in vertebrate smooth muscle. 403.
Bornstein, P., *See* Raugi, Mumby, Abbott-Brown, and Bornstein.
Bourguignon, L. Y. W., Nagpal, M. L., Balazovich, K., Guerriero, V., and Means, A. R. Association of myosin light chain kinase with lymphocyte membrane-cytoskeleton complex. 793.
Bradshaw, R. A., *See* Lemmon, Riley, Thomas, Hoover, Maciag, and Bradshaw.
Brands, R., *See* Griffiths, Brands, Burke, Louvard, and Warren.
Brody, J. S., Vaccaro, C. A., Gill, P. J., and Silbert, J. E. Alterations in alveolar basement membranes during postnatal lung growth. 394.
Brown, M. S., *See* Carpentier, Gorden, Anderson, Goldstein, Brown, Cohen, and Orci.
Buck, C., *See* Neff, Lowrey, Decker, Tovar, Damsky, Buck, and Horwitz.
Burgeson, R. E., *See* Goldberg and Burgeson.
Burgess, D. R. Reactivation of intestinal epithelial cell brush border motility. ATP-dependent contraction via a terminal web contractile ring. 853.
Burke, B., *See* Griffiths, Brands, Burke, Louvard, and Warren.
Burnett, E. J., *See* Hill, Mott, Burnett, Abmayr, Lowenhaupt, and Elgin.
Burnside, B., *See* O'Connor and Burnside.
Burridge, K., Kelly, T., and Mangeat, P. Nonerythrocyte spectrins: actin-membrane attachment proteins occurring in many cell types. 478.
Busson-Mabillot, S., Chambaut-Guérin, A.-M., Ovtracht, L., Muller, P., and Rossignol, B. Microtubules and protein secretion in rat lacrimal glands: localization of short-term effects of colchicine on the secretory process. 105.

C

Cancalon, P., Slow flow in axons detached from their perikarya. 991.
Cantor, H. Dvorak, H. F., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Carlin, R. K., *See* Bartelt, Carlin, Scheele, and Cohen.
Carney, D. H., and Bergmann, J. S. ^{125}I-Thrombin binds to clustered receptors on noncoated regions of mouse embryo cell surfaces. 697.
Carpentier, J.-L., Gorden, P., Anderson, R. G. W., Goldstein, J. L., Brown, M. S., Cohen, S., and Orci, L. Co-localization of ^{125}I-epidermal growth factor and ferritin-low density lipoprotein in coated pits: a quantitative electron microscopic study in normal and mutant human fibroblasts. 73.
Castellani, L., *See* Cohen, Reinhardt, Castellani, Norton, and Stirewalt.
Castle, J. D., *See* Arvan and Castle.
Chaikin, M. A., *See* Singh, Chaikin, and Stiles.
Chambaut-Guérin, A.-M., *See* Busson-Mabillot, Chambaut-Guérin, Ovtracht, Muller, and Rossignol.
Chen, W.-T., and Singer, S. J. Immunoelectron microscopic studies of the sites of cell-substratum and cell-cell contacts in cultured fibroblasts. 205.
Cheng, Y.-S., *See* Satter, Garber, Khairallah, and Cheng.
Chow, I., and Poo, M. Redistribution of cell surface receptors induced by cell-cell contact. 510.
Chung, S. D., Alavi, N., Livingston, D., Hiller, S., and Taub, M. Characterization of primary rabbit kidney cultures that express proximal tubule functions in a hormonally defined medium. 118.
Cohen, C., Reinhardt, B., Castellani, L., Norton, P., and Stirewalt, M. Schistosome surface spines are "crystals" of actin. 989.
Cohen, S., *See* Carpentier, Gorden, Anderson, Goldstein, Brown, Cohen, and Orci.
Cohen, S. R., *See* Omlin, Webster, Palkovits, and Cohen.
Cohen, W. D., *See* Bartelt, Carlin, Scheele, and Cohen.
Colman, D. R., Kreibich, G., Frey, A. B., and Sabatini, D. D. Synthesis and incorporation of myelin polypeptides into CNS myelin. 598.
Couchman, J. R., *See* Hogan, Taylor, Kurkinen, and Couchman.
Crane, R., *See* Papasozomenos, Yoon, Crane, Autilio-Gambetti, and Gambetti.
Cross, A. R., *See* Roberts, Cross, Jones, and Segal.

D

Damsky, C., *See* Neff, Lowrey, Decker, Tovar, Damsky, Buck, and Horwitz.

Davies, P. J. A., *See* Murtaugh, Steiner, and Davies.
De Boisfleury, A. C., *See* Malawista and De Boisfleury.
Decker, C., *See* Neff, Lowrey, Decker, Tovar, Damsky, Buck, and Horwitz.
Delay, R. J., *See* Fifková and Delay.
Der Simonian, H., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Dvorak, A. M., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.

E

Edidin, M., and Wei, T. Lateral diffusion of H-2 antigens on mouse fibroblasts. 458.
Edidin, M., Wei, T., and Gotlib, L. Diffusion rates of cell surface antigens of mouse-human heterokaryons. III. Regulation of lateral diffusion rates by calcium ions. 453.
Eichner, R., *See* Woodcock-Mitchell, Eichner, Nelson, and Sun.
Eldredge, D., *See* Baumann and Eldredge.
Elgin, S. C. R., *See* Hill, Mott, Burnett, Abmayr, Lowenhaupt, and Elgin.
Emr, S. D., and Silhavy, T. J. Molecular components of the signal sequence that function in the iniation of protein export. 689.
Engvall, E., *See* Hayman, Engvall, A'Hearn, Barnes, Pierschbacher, and Ruoslahti.
Erickson, H. P., *See* Ohmori, Fretto, Harrison, Switzer, Erickson, and McKee.

F

Feher, G., *See* Valkirs and Feher.
Fifková, E., and Delay, R. J. Cytoplasmic actin in neuronal processes as a possible mediator of synaptic plasticity. 345.
Fischman, D. A., *See* Bader, Masaki, and Fischman.
—, *See* Reinach, Masaki, Shafiq, Obinata, and Fischman.
Fitch, J. M., Gibney, E., Sanderson, R. D., Mayne, R., and Linsenmayer, T. F. Domain and basement membrane specificity of a monoclonal antibody against chicken Type IV collagen. 641.
Flavin, M., *See* Nath, Flavin, and Gallin.
Franke, W. W., *See* Moll, Franke, Volc-Platzer, and Krepler.
Freedman, S. D., and Jamieson, J. D. Hormone-induced protein phosphorylation. I. The relationship between secretagogue action and endogenous protein phosphorylation in intact cells from the exocrine pancreas and parotid. 903.
—, **and Jamieson, J. D.** Hormone-induced protein phosphorylation. II. Localization to the ribosomal fraction from rat exocrine pancreas and parotid of a 29,000-dalton protein phosphorylated *in situ* in response to secretagogues. 909.
—, **and Jamieson, J. D.** Hormone-induced protein phosphorylation. III. Regulation of the phosphorylation of the secretagogue-responsive 29,000-dalton protein by both Ca^{++} and cAMP in vitro. 918.
Fretto, L. J., *See* Ohmori, Fretto, Harrison, Switzer, Erickson, and McKee.
Frey, A. B., *See* Colman, Kreibich, Frey, and Sabatini.
Friedman, R. S., *See* Hoffstein, Friedman, and Weissmann.
Fritsch, P., *See* Schuler, Hintner, Wolff, Fritsch, and Stingl.
Funderud, S., *See* Haugli, Andreassen, and Funderud.

G

Gabel, C. A., Goldberg, D. E., and Kornfeld, S. Lysosomal enzyme oligosaccharide phosphorylation in mouse lymphoma cells: specificity and kinetics of binding to the mannose 6-phosphate receptor in vivo. 536.
Galli, S. J., Dvorak, A. M., Marcum, J. A., Ishizaka, T., Nabel, G., Der Simonian, H., Pyne, K., Goldin, J. M., Rosenberg, R. D., and Cantor, H. Dvorak, H. F. Mast cell clones: a model for the analysis of cellular differentiation. 435.
Gallin, J. I., *See* Nath, Flavin, and Gallin.
Gambetti, P., *See* Papasozomenos, Yoon, Crane, Autilio-Gambetti, and Gambetti.
Garber, R. C., *See* Satter, Garber, Khairallah, and Cheng.
Geiger, B., Rosen, D., and Berke, G. Spatial relationships of microtubule-organizing centers and the contact area of cytotoxic T lymphocytes and target cells. 137.
Gerace, L., Ottaviano, Y., and Kondor-Koch, C. Identification of a major polypeptide of the nuclear pore complex. 826.
Gibney, E., *See* Fitch, Gibney, Sanderson, Mayne, and Linsenmayer.
Gill, P. J., *See* Brody, Vaccaro, Gill, and Silbert.
Gillies, R. J., Ogino, T., Shulman, R. G., and Ward, D. C. ^{31}P Nuclear magnetic resonance evidence for the regulation of intracellular pH by Ehrlich ascites tumor cells. 24.
Gilmore, R., Blobel, G., and Walter, P. Protein translocation across the endoplasmic reticulum. I. Detection in the microsomal membrane of a receptor for the signal recognition particle. 463.
—, **Walter, P., and Blobel, G.** Protein translocation across the endoplasmic reticulum. II. Isolation and characterization of the signal recognition particle receptor. 470.
Gingrich, J. C., Williams, R. C., and Glazer, A. N. Rod substructure in cyanobacterial phycobilisomes: phycoerythrin assembly in *Synechocystis* 6701 phycobilisomes. 170.
Glazer, A. N., *See* Gingrich, Williams, and Glazer.
Glomset, J. A., *See* Schmidt, Glomset, Wight, Habenicht, and Ross.
Goldberg, B. D., Binding of soluble Type I collagen to fibroblasts: effects of thermal activation of ligand, ligand concentration, pinocytosis, and cytoskeletal modifiers. 747.
—, **and Burgeson, R. E.** Binding of soluble Type I collagen to fibroblasts: specificities for native collagen types, triple helical structure, telopeptides, propeptides, and cyanogen bromide-derived peptides. 752.
Goldberg, D. E., *See* Gabel, Goldberg, and Kornfeld.
Goldin, J. M., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Goldstein, J. L., *See* Carpentier, Gorden, Anderson, Goldstein, Brown, Cohen, and Orci.
Goldstein, S., *See* Wojtyk and Goldstein.
Goodenough, U. W., and Heuser, J. E. Substructure of the outer dynein arm. 798.
Gorden, P., *See* Carpentier, Gorden, Anderson, Goldstein, Brown, Cohen, and Orci.
Gordon, R. E., Williams, K. B., and Puszkin, S. Immune localization of calmodulin in the ciliated cells of hamster tracheal epithelium. 57.
Gorza, L., Sartore, S., and Schiaffino, S. Myosin types and fiber types in cardiac muscle. II. Atrial myocardium. 838.
Gotlib, L., *See* Edidin, Wei, and Gotlib.
Gown, A. M., and Vogel, A. M. Monoclonal antibodies to intermediate filament proteins of human cells: unique and cross-reacting antibodies. 414.
Granger, D. L., and Lehninger, A. L. Sites of inhibition of mitochondrial electron transport in macrophage-injured neoplastic cells. 527.
Greenburg, G., and Hay, E. D. Epithelia suspended in collagen gels can lose polarity and express characteristics of migrating mesenchymal cells. 333.
Greene, L. A., *See* Black and Greene.
Griffiths, G., Brands, R., Burke, B., Louvard, D., and Warren, G. Viral membrane proteins acquire galactose in *trans* Golgi cisternae during intracellular transport. 781.
Grinnell, F., *See* Oppenheimer-Marks and Grinnell.
Gross, J. L., Moscatelli, D., Jaffe, E. A., and Rifkin, D. B. Plasminogen activator and collagenase production by cultured capillary endothelial cells. 975.
Guerriero, V., *See* Bourguignon, Nagpal, Balazovich, Guerriero, and Means.

H

Habenicht, A. J. R., *See* Schmidt, Glomset, Wight, Habenicht, and Ross.
Hall, N. G., *See* Shur and Hall.

—, *See* Shur and Hall.
Hamkalo, B. A., *See* Hutchison, Langer-Safer, Ward, and Hamkalo.
Harrison, R. L., *See* Ohmori, Fretto, Harrison, Switzer, Erickson, and McKee.
Haugli, F., Andreassen, R., and Funderud, S. DNA replication in *Physarum polycephalum*: electron microscopic analysis of patterns of DNA replication in the presence of cycloheximide. 323.
Hauptman, P. J., *See* Liscum, Hauptman, Hood, and Holtzman.
Hay, E. D., *See* Greenburg and Hay.
Hayman, E. G., Engvall, E., A'Hearn, E., Barnes, D., Pierschbacher, M., and Ruoslahti, E. Cell attachment on replicas of SDS polyacrylamide gels reveals two adhesive plasma proteins. 20.
Hays, T. S., *See* Nicklas, Kubai, and Hays.
Heersche, J. N. M., *See* Beertsen, Heersche, and Aubin.
Heuser, J. E., *See* Goodenough and Heuser.
—, *See* Roof and Heuser.
—, *See* Roof, Korenbrot, and Heuser.
Hill, R. J., Mott, M. R., Burnett, E. J., Abmayr, S. M., Lowenhaupt, K., and Elgin, S. C. R. Nucleosome repeat structure is present in native salivary chromosomes of *Drosophila melanogaster*. 262.
Hiller, S., *See* Chung, Alavi, Livingston, Hiller, and Taub.
Hintner, H., *See* Schuler, Hintner, Wolff, Fritsch, and Stingl.
Hirokawa, N., and Tilney, L. G. Interactions between actin filaments and between actin filaments and membranes in quick-frozen and deeply etched hair cells of the chick ear. 249.
Hoffstein, S. T., Friedman, R. S., and Weissmann, G. Degranulation, membrane addition, and shape change during chemotactic factor-induced aggregation of human neutrophils. 234.
Hogan, B. L. M., Taylor, A., Kurkinen, M., and Couchman, J. R. Synthesis and localization of two sulphated glycoproteins associated with basement membranes and the extracellular matrix. 197.
Holtzman, E., *See* Liscum, Hauptman, Hood, and Holtzman.
Hoober, J. K., Marks, D. B., Keller, B. J., and Margulies, M. M. Regulation of accumulation of the major thylakoid polypeptides in *Chlamydomonas reinhardtii* y-1 at 25°C and 38°C. 552.
Hood, D. C., *See* Liscum, Hauptman, Hood, and Holtzman.
Hoover, G. A., *See* Lemmon, Riley, Thomas, Hoover, Maciag, and Bradshaw.
Horwitz, A. F., *See* Neff, Lowrey, Decker, Tovar, Damsky, Buck, and Horwitz.
Hull, B. E., *See* Iwanij, Hull, and Jamieson.
Hutchison, N. J., Langer-Safer, P. R., Ward, D. C., and Hamkalo, B. A. *In situ* hybridization at the electron microscope level: hybrid detection by autoradiography and colloidal gold. 609.
Hynes, R. O., and Yamada, K. M. Fibronectins: multifunctional modular glycoproteins. 369.

I

Ishizaka, T., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Iwanij, V., and Jamieson, J. D. Biochemical analysis of secretory proteins synthesized by normal rat pancreas and by pancreatic acinar tumor cells. 734.
—, **and Jamieson, J. D.** Comparison of secretory protein profiles in developing rat pancreatic rudiments and rat acinar tumor cells. 742.
—, **Hull, B. E., and Jamieson, J. D.** Structural characterization of a rat acinar cell tumor. 727.

J

Jaffe, E. A., *See* Gross, Moscatelli, Jaffe, and Rifkin.
Jamieson, J. D., *See* Iwanij and Jamieson.
—, *See* Iwanij and Jamieson.
—, *See* Iwanij, Hull, and Jamieson.
—, *See* Freedman and Jamieson.
—, *See* Freedman and Jamieson.
—, *See* Freedman and Jamieson.
Jeffery, W. R., Messenger RNA in the cytoskeletal framework: analysis by *in situ* hybridization. 1.
Jones, O. T. G., *See* Roberts, Cross, Jones, and Segal.

K

Karnovsky, M. J., *See* Nelson, Andrews, and Karnovsky.
—, *See* Robinson, Karnovsky, and Karnovsky.
Karnovsky, M. L., *See* Robinson, Karnovsky, and Karnovsky.
Keller, B. J., *See* Hoober, Marks, Keller, and Margulies.
Keller III, T. C. S., and Mooseker, M. S. Ca^{++}-Calmodulin-dependent phosphorylation of myosin and its role in brush border contraction in vitro. 943.
Kelly, T., *See* Burridge, Kelly, and Mangeat.
Khairallah, L., *See* Satter, Garber, Khairallah, and Cheng.
Kilejian, A., *See* Olson and Kilejian.
Kondor-Koch, C., *See* Gerace, Ottaviano, and Kondor-Koch.
Kopf, G. S., Moy, G. W., and Vacquier, V. D. Isolation and characterization of sea urchin egg cortical granules. 924.
Korenbrot, J. I., *See* Roof, Korenbrot, and Heuser.
Kornfeld, S., *See* Gabel, Goldberg, and Kornfeld.
Kreibich, G., *See* Colman, Kreibich, Frey, and Sabatini.
Krepler, R., *See* Moll, Franke, Volc-Platzer, and Krepler.
Kubai, D. F., *See* Nicklas, Kubai, and Hays.
Kurkinen, M., *See* Hogan, Taylor, Kurkinen, and Couchman.

L

Lambowitz, A. M., *See* LaPolla and Lambowitz.
Langer-Safer, P. R., *See* Hutchison, Langer-Safer, Ward, and Hamkalo.
—, *See* Manuelidis, Langer-Safer, and Ward.
LaPolla, R. J., and Lambowitz, A. M. Mitochondrial ribosome assembly in *Neurospora*: structural analysis of mature and partially assembled ribosomal subunits by equilibrium centrifugation in CsCl gradients. 267.
Laurie, G. W., Leblond, C. P., and Martin, G. R. Localization of type IV collagen, laminin, heparan sulfate proteoglycan, and fibronectin to the basal lamina of basement membranes. 340.
Leblond, C. P., *See* Laurie, Leblond, and Martin.
Lehninger, A. L., *See* Granger and Lehninger.
Lemmon, S. K., Riley, M. C., Thomas, K. A., Hoover, G. A., Maciag, T., and Bradshaw, R. A. Bovine fibroblast growth factor: comparison of brain and pituitary preparations. 162.
Leterrier, J.-F., Liem, R. K. H., and Shelanski, M. L. Interactions between neurofilaments and microtubule-associated proteins: a possible mechanism for intraorganellar bridging. 983.
Liem, R. K. H., *See* Leterrier, Liem, and Shelanski.
Linder, S., Zuckerman, S. H., and Ringertz, N. R. Pattern of chick gene activation in chick erythrocyte heterokaryons. 885.
Linsenmayer, T. F., *See* Fitch, Gibney, Sanderson, Mayne, and Linsenmayer.
Liscum, L., Hauptman, P. J., Hood, D. C., and Holtzman, E. Effects of barium and tetraethylammonium on membrane circulation in frog retinal photoreceptors. 296.
Livingston, D., *See* Chung, Alavi, Livingston, Hiller, and Taub.
Louvard, D., *See* Griffiths, Brands, Burke, Louvard, and Warren.
Lowenhaupt, K., *See* Hill, Mott, Burnett, Abmayr, Lowenhaupt, and Elgin.
Lowrey, C., *See* Neff, Lowrey, Decker, Tovar, Damsky, Buck, and Horwitz.

M

Maciag, T., *See* Lemmon, Riley, Thomas, Hoover, Maciag, and Bradshaw.
Malawista, S. E., and De Boisfleury Chevance, A. The cytokineplast: purified, stable, and functional motile machinery from human

blood polymorphonuclear leukocytes. Possible formative role of heat-induced centrosomal dysfunction. 960.
Mangeat, P., *See* Burridge, Kelly, and Mangeat.
Manuelidis, L., Langer-Safer, P. R., and Ward, D. C. High-resolution mapping of satellite DNA using biotin-labeled DNA probes. 619.
Marcum, J. A., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Marder, V. J., *See* Wagner, Olmsted, and Marder.
Margulies, M. M., *See* Hoober, Marks, Keller, and Margulies.
Marks, D. B., *See* Hoober, Marks, Keller, and Margulies.
Martin, G. R., *See* Laurie, Leblond, and Martin.
Maruyama, K., *See* Ohashi, Mikawa, and Maruyama.
Masaki, T., *See* Bader, Masaki, and Fischman.
—, *See* Reinach, Masaki, Shafiq, Obinata, and Fischman.
Mascardo, R., *See* Sherline and Mascardo.
Masuda, H., *See* Owaribe and Masuda.
Matsuura, S., Nakada, H., Sawamura, T., and Tashiro, Y. Distribution of an Asialoglyoprotein receptor on rat hepatocyte cell surface. 864.
Maxfield, F. R., Weak bases and ionophores rapidly and reversibly raise the pH of endocytic vesicles in cultured mouse fibroblasts. 676.
Mayne, R., *See* Fitch, Gibney, Sanderson, Mayne, and Linsenmayer.
McKee, P. A., *See* Ohmori, Fretto, Harrison, Switzer, Erickson, and McKee.
Means, A. R., *See* Bourguignon, Nagpal, Balazovich, Guerriero, and Means.
Mikawa, T., *See* Ohashi, Mikawa, and Maruyama.
Milligan, R. A., and Unwin, P. N. T. In vitro crystallization of ribosomes from chick embryos. 648.
Moll, R., Franke, W. W., Volc-Platzer, B., and Krepler, R. Different keratin polypeptides in epidermis and other epithelia of human skin: a specific cytokeratin of molecular weight 46,000 in epithelia of the pilosebaceous tract and basal cell epitheliomas. 285.
Mooseker, M. S., *See* Keller III and Mooseker.
—, **Pollard, T. D., and Wharton, K. A.** Nucleated polymerization of actin from the membrane-associated ends of microvillar filaments in the intestinal brush border. 223.
Moscatelli, D., *See* Gross, Moscatelli, Jaffe, and Rifkin.
Mott, M. R., *See* Hill, Mott, Burnett, Abmayr, Lowenhaupt, and Elgin.
Moy, G. W., *See* Kopf, Moy, and Vacquier.
Muller, P., *See* Busson-Mabillot, Chambaut-Guérin, Ovtracht, Muller, and Rossignol.
Mumby, S. M., *See* Raugi, Mumby, Abbott-Brown, and Bornstein.
Murtaugh, M. P., Steiner, A. L., and Davies, P. J. A. Localization of the catalytic subunit of cyclic AMP-dependent protein kinase in cultured cells using a specific antibody. 64.

N

Nabel, G., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Nagpal, M. L., *See* Bourguignon, Nagpal, Balazovich, Guerriero, and Means.
Nakada, H., *See* Matsuura, Nakada, Sawamura, and Tashiro.
Nath, J., Flavin, M., and Gallin, J. I. Tubulin tyrosinolation in human polymorphonuclear leukocytes: studies in normal subjects and in patients with the Chediak-Higashi syndrome. 519.
Neff, N. T., Lowrey, C., Decker, C., Tovar, A., Damsky, C., Buck, C., and Horwitz, A. F. A monoclonal antibody detaches embryonic skeletal muscle from extracellular matrices. 654.
Nelson, G. A., Andrews, M. L., and Karnovsky, M. J. Participation of calmodulin in immunoglobulin capping. 771.
Nelson, W. G., *See* Woodcock-Mitchell, Eichner, Nelson, and Sun.
Nicklas, R. B., Kubai, D. F., and Hays, T. S. Spindle microtubules and their mechanical associations after micromanipulation in anaphase. 91.
Norton, P., *See* Cohen, Reinhardt, Castellani, Norton, and Stirewalt.

O

Obinata, T., *See* Reinach, Masaki, Shafiq, Obinata, and Fischman.
O'Connor, P., and Burnside, B. Elevation of cyclic AMP activates an actin-dependent contraction in teleost retinal rods. 445.
Ogino, T., *See* Gillies, Ogino, Shulman, and Ward.
Ohashi, K., Mikawa, T., and Maruyama, K. Localization of Z-protein in isolated Z-disk sheets of chicken leg muscle. 85.
Ohmori, K., Fretto, L. J., Harrison, R. L., Switzer, M. E. P., Erickson, H. P., and McKee, P. A. Electron microscopy of human factor VIII/von Willebrand glycoprotein: effect of reducing reagents on structure and function. 632.
Oliver, C., Endocytic pathways at the lateral and basal cell surfaces of exocrine acinar cells. 154.
Olmsted, J. B., *See* Wagner, Olmsted, and Marder.
Olson, J. A., and Kilejian, A. Involvement of spectrin and ATP in infection of resealed erythrocyte ghosts by the human malarial parasite *Plasmodium falciparum*. 757.
Omlin, F. X., Webster, H. deF., Palkovits, C. G., and Cohen, S. R. Immunocytochemical localization of basic protein in major dense line regions of central and peripheral myelin. 242.
Oppenheimer-Marks, N., and Grinnell, F. Inhibition of fibronectin receptor function by antibodies against baby-hamster-kidney cell wheat germ agglutinin receptors. 876.
Orci, L., *See* Carpentier, Gorden, Anderson, Goldstein, Brown, Cohen, and Orci.
Ottaviano, Y., *See* Gerace, Ottaviano, and Kondor-Koch.
Ovtracht, L., *See* Busson-Mabillot, Chambaut-Guérin, Ovtracht, Muller, and Rossignol.
Owaribe, K., and Masuda, H. Isolation and characterization of circumferential microfilament bundles from retinal pigmented epithelial cells. 310.

P

Palade, G. E., *See* Simionescu, Simionescu, and Palade.
Palkovits, C. G., *See* Omlin, Webster, Palkovits, and Cohen.
Papasozomenos, S. Ch., Yoon, M., Crane, R., Autilio-Gambetti, L., and Gambetti, P. Redistribution of proteins of fast axonal transport following administration of β, β'-iminodipropionitrile: a quantitative autoradiographic study. 672.
Pardee, J. D., *See* Yamamoto, Pardee, Reidler, Stryer, and Spudich.
Pierschbacher, M., *See* Hayman, Engvall, A'Hearn, Barnes, Pierschbacher, and Ruoslahti.
Pollard, T. D., Structure and polymerization of *Acanthamoeba* myosin-II filaments. 816.
—, *See* Mooseker, Pollard, and Wharton.
Poo, M., *See* Chow and Poo.
Pozzan, T., *See* Rink, Tsien, and Pozzan.
Puszkin, S., *See* Gordon, Williams, and Puszkin.
Pyne, K., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.

R

Rao, M. S., Reddy, M. K., Reddy, J. K., and Scarpelli, D. G. Response of chemically induced hepatocytelike cells in hamster pancreas to methyl clofenapate, a peroxisome proliferator. 50.
Raugi, G. J., Mumby, S. M., Abbott-Brown, D., and Bornstein, P. Thrombospondin: synthesis and secretion by cells in culture. 351.
Reddy, J. K., *See* Rao, Reddy, Reddy, and Scarpelli.
Reddy, M. K., *See* Rao, Reddy, Reddy, and Scarpelli.
Reidler, J., *See* Yamamoto, Pardee, Reidler, Stryer, and Spudich.
Reinach, F. C., Masaki, T., Shafiq, S., Obinata, T., and Fischman, D. A. Isoforms of C-protein in adult chicken skeletal muscle: detection with monoclonal antibodies. 78.
Reinhardt, B., *See* Cohen, Reinhardt, Castellani, Norton, and Stirewalt.
Rifkin, D. B., *See* Gross, Moscatelli, Jaffe, and Rifkin.
Riley, M. C., *See* Lemmon, Riley, Thomas, Hoover, Maciag, and Bradshaw.
Ringertz, N. R., *See* Linder, Zuckerman, and Ringertz.

Rink, T. J., Tsien, R. Y., and Pozzan, T. Cytoplasmic pH and free Mg^{2+} in lymphocytes. 189.
Roberts, P. J., Cross, A. R., Jones, O. T. G., and Segal, A. W. Development of cytochrome b_{-245} and an active oxidase system in association with maturation of a human promyelocytic (HL-60) cell line. 720.
Robinson, J. M., Karnovsky, M. L., and Karnovsky, M. J. Glycogen accumulation in polymorphonuclear leukocytes, and other intracellular alterations that occur during inflammation. 933.
Roof, D. J., and Heuser, J. E. Surfaces of rod photoreceptor disk membranes: integral membrane components. 487.
Roof, D. J., Korenbrot, J. I., and Heuser, J. E. Surfaces of rod photoreceptor disk membranes: light-activated enzymes. 501.
Rosen, D., *See* Geiger, Rosen, and Berke.
Rosenberg, R. D., *See* Galli, Dvorak, Marcum, Ishizaka, Nabel, Der Simonian, Pyne, Goldin, Rosenberg, and Cantor.
Ross, R., *See* Schmidt, Glomset, Wight, Habenicht, and Ross.
Rossignol, B., *See* Busson-Mabillot, Chambaut-Guérin, Ovtracht, Muller, and Rossignol.
Ruoslahti, E., *See* Hayman, Engvall, A'Hearn, Barnes, Pierschbacher, and Ruoslahti.

S

Sabatini, D. D., *See* Colman, Kreibich, Frey, and Sabatini.
Sanderson, R. D., *See* Fitch, Gibney, Sanderson, Mayne, and Linsenmayer.
Sartore, S., *See* Gorza, Sartore, and Schiaffino.
Satter, R. L., Garber, R. C., Khairallah, L., and Cheng, Y.-S. Elemental analysis of freeze-dried thin sections of *Samanea* motor organs: barriers to ion diffusion through the apoplast. 893.
Sawamura, T., *See* Matsuura, Nakada, Sawamura, and Tashiro.
Scarpelli, D. G., *See* Rao, Reddy, Reddy, and Scarpelli.
Scheele, G. A., *See* Bartelt, Carlin, Scheele, and Cohen.
Schiaffino, S., *See* Gorza, Sartore, and Schiaffino.
Schmidt, R. A., Glomset, J. A., Wight, T. N., Habenicht, A. J. R., and Ross, R. A study of the influence of mevalonic acid and its metabolites on the morphology of Swiss 3T3 cells. 144.
Schuler, G., Hintner, H., Wolff, K., Fritsch, P., and Stingl, G. In vitro complement-binding on cytoplasmic structures in normal human skin: immunoelectronmicroscopic studies. 543.
Segal, A. W., *See* Roberts, Cross, Jones, and Segal.
Shadle, P. J., and Barondes, S. H. Adhesion of human platelets to immobilized trimeric collagen. 361.
Shafiq, S., *See* Reinach, Masaki, Shafiq, Obinata, and Fischman.
Shelanski, M. L., *See* Leterrier, Liem, and Shelanski.
Sherline, P., and Mascardo, R. Epidermal growth factor-induced centrosomal separation: mechanism and relationship to mitogenesis. 316.
Shulman, R. G., *See* Gillies, Ogino, Shulman, and Ward.
Shur, B. D., and Hall, N. G. A role for mouse sperm surface galactosyltransferases in sperm binding to the egg zona pellucida. 574.
—, **and Hall, N. G.** Sperm surface galactosyltransferase activities during in vitro capacitation. 567.
Silbert, J. E., *See* Brody, Vaccaro, Gill, and Silbert.
Silhavy, T. J., *See* Emr and Silhavy.
Simionescu, M., Simionescu, N., and Palade, G. E. Preferential distribution of anionic sites on the basement membrane and the abluminal aspect of the endothelium in fenestrated capillaries. 425.
Simionescu, N., *See* Simionescu, Simionescu, and Palade.
Singer, S. J., *See* Chen and Singer.
Singh, J. P., Chaikin, M. A., and Stiles, C. D. Phylogenetic analysis of platelet-derived growth factor by radio-receptor assay. 667.
Smit, J., and Agabian, N. Cell surface patterning and morphogenesis: biogenesis of a periodic surface array during *Caulobacter* development. 41.
Somlyo, A. V., *See* Bond and Somlyo.
Soranno, T., and Bell, E. Cytostructural dynamics of spreading and translocating cells. 127.
Spudich, J. A., *See* Yamamoto, Pardee, Reidler, Stryer, and Spudich.
Steiner, A. L., *See* Murtaugh, Steiner, and Davies.
Stiles, C. D., *See* Singh, Chaikin, and Stiles.
Stingl, G., *See* Schuler, Hintner, Wolff, Fritsch, and Stingl.
Stirewalt, M., *See* Cohen, Reinhardt, Castellani, Norton, and Stirewalt.
Stryer, L., *See* Yamamoto, Pardee, Reidler, Stryer, and Spudich.
Sun, T.-T., *See* Woodcock-Mitchell, Eichner, Nelson, and Sun.
Surprenant, A., Correlation between electrical activity and ACTH/β-endorphin secretion in mouse pituitary tumor cells. 559.
Switzer, M. E. P., *See* Ohmori, Fretto, Harrison, Switzer, Erickson, and McKee.

T

Tamm, S. L., *See* Yamin and Tamm.
Tashiro, Y., *See* Matsuura, Nakada, Sawamura, and Tashiro.
Taub, M., *See* Chung, Alavi, Livingston, Hiller, and Taub.
Taylor, A., *See* Hogan, Taylor, Kurkinen, and Couchman.
Thomas, K. A., *See* Lemmon, Riley, Thomas, Hoover, Maciag, and Bradshaw.
Tilney, L. G., *See* Hirokawa and Tilney.
Tovar, A., *See* Neff, Lowrey, Decker, Tovar, Damsky, Buck, and Horwitz.
Tsien, R. Y., *See* Rink, Tsien, and Pozzan.

U

Unwin, P. N. T., *See* Milligan and Unwin.

V

Vaccaro, C. A., *See* Brody, Vaccaro, Gill, and Silbert.
Vacquier, V. D., *See* Kopf, Moy, and Vacquier.
Valkirs, G. E., and Feher, G. Topography of reaction center subunits in the membrane of the photosynthetic bacterium, *Rhodopseudomonas sphaeroides*. 179.
Vogel, A. M., *See* Gown and Vogel.
Volc-Platzer, B., *See* Moll, Franke, Volc-Platzer, and Krepler.

W

Wagner, D. D., Olmsted, J. B., and Marder, V. J. Immunolocalization of von Willebrand protein in Weibel-Palade antibodies of human endothelial cells. 355.
Walter, P., *See* Gilmore, Blobel, and Walter.
—, *See* Gilmore, Walter, and Blobel.
Ward, D. C., *See* Gillies, Ogino, Shulman, and Ward.
—, *See* Hutchison, Langer-Safer, Ward, and Hamkalo.
—, *See* Manuelidis, Langer-Safer, and Ward.
Warren, G., *See* Griffiths, Brands, Burke, Louvard, and Warren.
Webb, W. W., *See* Barak and Webb.
Webster, H. deF., *See* Omlin, Webster, Palkovits, and Cohen.
Wei, T., *See* Edidin and Wei.
—, *See* Edidin, Wei, and Gotlib.
Weissmann, G., *See* Hoffstein, Friedman, and Weissmann.
Wharton, K. A., *See* Mooseker, Pollard, and Wharton.
Wight, T. N., *See* Schmidt, Glomset, Wight, Habenicht, and Ross.
Williams, K. B., *See* Gordon, Williams, and Puszkin.
Williams, R. C., *See* Gingrich, Williams, and Glazer.
Wojtyk, R. I., and Goldstein, S. Clonal selection in cultured human fibroblasts: role of protein synthetic errors. 704.
Wolff, K., *See* Schuler, Hintner, Wolff, Fritsch, and Stingl.
Woodcock-Mitchell, J., Eichner, R., Nelson, W. G., and Sun, T.-T. Immunolocalization of keratin polypeptides in human epidermis using monoclonal antibodies. 580.

Y

Yamada, K. M., *See* Hynes and Yamada.

Yamamoto, K., Pardee, J. D., Reidler, J., Stryer, L., and Spudich, J. A. Mechanism of interaction of *Dictyostelium* severin with actin filaments. 711.

Yamin, M. A., and Tamm, S. L. ATP reactivation of the rotary axostyle in termite flagellates: effects of dynein ATPase inhibitors. 589.

Yoon, M., *See* Papasozomenos, Yoon, Crane, Autilio-Gambetti, and Gambetti.

Z

Zieske, J. D., and Bernstein, I. A. Modification of cell surface glycoprotein: addition of fucosyl residues during epidermal differentiation. 626.

Zuckerman, S. H., *See* Linder, Zuckerman, and Ringertz.

THE JOURNAL OF CELL BIOLOGY

Edited by

SAMUEL C. SILVERSTEIN, *Chairman*

RICHARD D. BERLIN*
GARY G. BORISY
MICHAEL S. BROWN
JOSEPH BRYAN
MARY B. BUNGE
NAM-HAI CHUA
SARAH C. R. ELGIN
NORTON B. GILULA
LUIS GLASER
MICHAEL M. GOTTESMAN
CHARLES R. HACKENBROCK
RICHARD B. HALLICK
BARBARA A. HAMKALO
ARI HELENIUS
LIONEL F. JAFFE
JAMES D. JAMIESON*
PETER LENGYEL
VINCENT T. MARCHESI
ANTHONY R. MEANS
VIVIANNE T. NACHMIAS
BJORN R. OLSEN
THORU PEDERSON
DAVID D. SABATINI*
RUTH SAGER
WILLIAM S. SLY
JAMES A. SPUDICH
D. LANSING TAYLOR
KENNETH M. YAMADA

* *Members of the Executive Committee*

RAYMOND B. GRIFFITHS, *Executive Editor*

VOLUME 94 • 1982

The Rockefeller University Press, New York
G. J. DOWD AND M. D. OPILLA
Copyediting and Production

Edited in cooperation with
THE AMERICAN SOCIETY FOR CELL BIOLOGY

COPYRIGHT © 1982 BY THE ROCKEFELLER UNIVERSITY PRESS

CONTENTS

VOLUME 95 NUMBER 1 OCTOBER 1982

Regular Articles

1 **W. R. Jeffery.** Messenger RNA in the cytoskeletal framework: analysis by *in situ* hybridization

8 **P. Arvan and J. D. Castle.** Plasma membrane of the rat parotid gland: preparation and partial characterization of a fraction containing the secretory surface

20 **E. G. Hayman, E. Engvall, E. A'Hearn, D. Barnes, M. Pierschbacher, and E. Ruoslahti.** Cell attachment on replicas of SDS polyacrylamide gels reveals two adhesive plasma proteins

24 **R. J. Gillies, T. Ogino, R. G. Shulman, and D. C. Ward.** ^{31}P Nuclear magnetic resonance evidence for the regulation of intracellular pH by Ehrlich ascites tumor cells

29 **H. Baumann and D. Eldredge.** Dexamethasone increases the synthesis and secretion of a partially active fibronectin in rat hepatoma cells

41 **J. Smit and N. Agabian.** Cell surface patterning and morphogenesis: biogenesis of a periodic surface array during *Caulobacter* development

50 **M. S. Rao, M. K. Reddy, J. K. Reddy, and D. G. Scarpelli.** Response of chemically induced hepatocytelike cells in hamster pancreas to methyl clofenapate, a peroxisome proliferator

57 **R. E. Gordon, K. B. Williams, and S. Puszkin.** Immune localization of calmodulin in the ciliated cells of hamster tracheal epithelium

64 **M. P. Murtaugh, A. L. Steiner, and P. J. A. Davies.** Localization of the catalytic subunit of cyclic AMP-dependent protein kinase in cultured cells using a specific antibody

73 **J.-L. Carpentier, P. Gorden, R. G. W. Anderson, J. L. Goldstein, M. S. Brown, S. Cohen, and L. Orci.** Co-localization of ^{125}I-epidermal growth factor and ferritin-low density lipoprotein in coated pits: a quantitative electron microscopic study in normal and mutant human fibroblasts

78 **F. C. Reinach, T. Masaki, S. Shafiq, T. Obinata, and D. A. Fischman.** Isoforms of C-protein in adult chicken skeletal muscle: detection with monoclonal antibodies

85 **K. Ohashi, T. Mikawa, and K. Maruyama.** Localization of Z-protein in isolated Z-disk sheets of chicken leg muscle

91 **R. B. Nicklas, D. F. Kubai, and T. S. Hays.** Spindle microtubules and their mechanical associations after micromanipulation in anaphase

105 **S. Busson-Mabillot, A.-M. Chambaut-Guérin, L. Ovtracht, P. Muller, and B. Rossignol.** Microtubules and protein secretion in rat lacrimal glands: localization of short-term effects of colchicine on the secretory process

118 **S. D. Chung, N. Alavi, D. Livingston, S. Hiller, and M. Taub.** Characterization of primary rabbit kidney cultures that express proximal tubule functions in a hormonally defined medium

127 **T. Soranno and E. Bell.** Cytoskeletal dynamics of spreading and translocating cells

137 **B. Geiger, D. Rosen, and G. Berke.** Spatial relationships of microtubule-organizing centers and the contact area of cytotoxic T lymphocytes and target cells

144 **R. A. Schmidt, J. A. Glomset, T. N. Wight, A. J. R. Habenicht, and R. Ross.** A study of the influence of mevalonic acid and its metabolites on the morphology of Swiss 3T3 cells

154 **C. Oliver.** Endocytic pathways at the lateral and basal cell surfaces of exocrine acinar cells

162 **S. K. Lemmon, M. C. Riley, K. A. Thomas, G. A. Hoover, T. Maciag, and R. A. Bradshaw.** Bovine fibroblast growth factor: comparison of brain and pituitary preparations

170 **J. C. Gingrich, R. C. Williams, and A. N. Glazer.** Rod substructure in cyanobacterial phycobilisomes: phycoerythrin assembly in *Synechocystis* 6701 phycobilisomes

179 **G. E. Valkirs and G. Feher.** Topography of reaction center subunits in the membrane of the photosynthetic bacterium, *Rhodopseudomonas sphaeroides*

189 **T. J. Rink, R. Y. Tsien, and T. Pozzan.** Cytoplasmic pH and free Mg^{2+} in lymphocytes

197 **B. L. M. Hogan, A. Taylor, M. Kurkinen, and J. R. Couchman.** Synthesis and localization of two sulphated glycoproteins associated with basement membranes and the extracellular matrix

205 **W.-T. Chen and S. J. Singer.** Immunoelectron microscopic studies of the sites of cell-substratum and cell-cell contacts in cultured fibroblasts

223 **M. S. Mooseker, T. D. Pollard, and K. A. Wharton.** Nucleated polymerization of actin from the membrane-associated ends of microvillar filaments in the intestinal brush border

234 **S. T. Hoffstein, R. S. Friedman, and G. Weissmann.** Degranulation, membrane addition, and shape change during chemotactic factor-induced aggregation of human neutrophils

242 **F. X. Omlin, H. deF. Webster, C. G. Palkovits, and S. R. Cohen.** Immunocytochemical localization of basic protein in major dense line regions of central and peripheral myelin

249 **N. Hirokawa and L. G. Tilney.** Interactions between actin filaments and between actin filaments and membranes in quick-frozen and deeply etched hair cells of the chick ear

262 **R. J. Hill, M. R. Mott, E. J. Burnett, S. M. Abmayr, K. Lowenhaupt, and S. C. R. Elgin.** Nucleosome repeat structure is present in native salivary chromosomes of *Drosophila melanogaster*

267 **R. J. LaPolla and A. M. Lambowitz.** Mitochondrial ribosome assembly in *Neurospora*. Structural analysis of mature and partially assembled ribosomal subunits by equilibrium centrifugation in CsCl gradients

278 **D. C. Bartelt, R. K. Carlin, G. A. Scheele, and W. D. Cohen.** Cytoskeletal system of nucleated erythrocytes. II. Presence of a high molecular weight calmodulin-binding protein

285 **R. Moll, W. W. Franke, B. Volc-Platzer, and R. Krepler.** Different keratin polypeptides in epidermis and other epithelia of human skin: a specific cytokeratin of molecular weight 46,000 in epithelia of the pilosebaceous tract and basal cell epitheliomas

296 **L. Liscum, P. J. Hauptman, D. C. Hood, and E. Holtzman.** Effects of barium and tetraethylammonium on membrane circulation in frog retinal photoreceptors

310 **K. Owaribe and H. Masuda.** Isolation and characterization of circumferential microfilament bundles from retinal pigmented epithelial cells

316 **P. Sherline and R. Mascardo.** Epidermal growth factor-induced centrosomal separation: mechanism and relationship to mitogenesis

323 **F. Haugli, R. Andreassen, and S. Funderud.** DNA replication in *Physarum polycephalum*: electron microscopic analysis of patterns of DNA replication in the presence of cycloheximide

Rapid Communications

333 **G. Greenburg and E. D. Hay.** Epithelia suspended in collagen gels can lose polarity and express characteristics of migrating mesenchymal cells

340 **G. W. Laurie, C. P. Leblond, and G. R. Martin.** Localization of Type IV collagen, laminin, heparan sulfate proteoglycan, and fibronectin to the basal lamina of basement membranes

345 **E. Fifková and R. J. Delay.** Cytoplasmic actin in neuronal processes as a possible mediator of synaptic plasticity

351 **G. J. Raugi, S. M. Mumby, D. Abbott-Brown, and P. Bornstein.** Thrombospondin: synthesis and secretion by cells in culture

355 **D. D. Wagner, J. B. Olmsted, and V. J. Marder.** Immunolocalization of Von Willebrand protein in Weibel-Palade bodies of human endothelial cells

361 **P. J. Shadle and S. H. Barondes.** Adhesion of human platelets to immobilized trimeric collagen

VOLUME 95 NUMBER 2 PART 1 NOVEMBER 1982

Perspectives

369 **R. O. Hynes and K. M. Yamada.** Fibronectins: multifunctional modular glycoproteins

Regular Articles

379 **M. M. Black and L. A. Greene.** Changes in the colchicine susceptibility of microtubules associated with neurite outgrowth: studies with nerve growth factor-responsive PC12 pheochromocytoma cells

387 **W. Beertsen, J. N. M. Heersche, and J. E. Aubin.** Free and polymerized tubulin in cultured bone cells and Chinese hamster ovary cells: the influence of cold and hormones

394 **J. S. Brody, C. A. Vaccaro, P. J. Gill, and J. E. Silbert.** Alterations in alveolar basement membranes during postnatal lung growth

403 **M. Bond and A. V. Somlyo.** Dense bodies and actin polarity in vertebrate smooth muscle

414 **A. M. Gown and A. M. Vogel.** Monoclonal antibodies to intermediate filament proteins of human cells: unique and cross-reacting antibodies

425 **M. Simionescu, N. Simionescu, and G. E. Palade.** Preferential distribution of anionic sites on the basement membrane and the abluminal aspect of the endothelium in fenestrated capillaries

435 **S. J. Galli, A. M. Dvorak, J. A. Marcum, T. Ishizaka, G. Nabel, H. D. Simonian, K. Pyne, J. M. Goldin, R. D. Rosenberg, H. Cantor, ad H. F. Dvorak.** Mast cell clones: a model for the analysis of cellular differentiation

445 **P. O'Connor and B. Burnside.** Elevation of cyclic AMP activates an actin-dependent contraction in teleost retinal rods

453 **M. Edidin, T. Wei, and L. Gotlib.** Diffusion rates of cell surface antigens of mouse-human heterokaryons. III. Regulation of lateral diffusion rates by calcium ions

458 **M. Edidin and T. Wei.** Lateral diffusion of H-2 antigens on mouse fibroblasts

463 **R. Gilmore, G. Blobel, and P. Walter.** Protein translocation across the endoplasmic reticulum. I. Detection in the microsomal membrane of a receptor for the signal recognition particle

470 **R. Gilmore, P. Walter, and G. Blobel.** Protein translocation across the endoplasmic reticulum. II. Isolation and characterization of the signal recognition particle receptor.

478 **K. Burridge, T. Kelly, and P. Mangeat.** Nonerythrocyte spectrins: actin-membrane attachment proteins occurring in many cell types

487 **D. J. Roof and J. E. Heuser.** Surfaces of rod photoreceptor disk membranes: integral membrane components.

501 **D. J. Roof, J. I. Korenbrot, and J. E. Heuser.** Surfaces of rod photoreceptor disk membranes: light-activated enzymes

510 **I. Chow and M. Poo.** Redistribution of cell surface receptors induced by cell-cell contacts

519 **J. Nath, M. Flavin, and J. I. Gallin.** Tubulin tyrosinolation in human polymorphonuclear leukocytes: studies in normal subjects and in patients with the Chediak-Higashi syndrome

527 **D. L. Granger and A. L. Lehninger.** Sites of inhibition of mitochondrial electron transport in macrophage-injured neoplastic cells

536 **C. A. Gabel, D. E. Goldberg, and S. Kornfeld.** Lysosomal enzyme oligosaccharide phosphorylation in mouse lymphoma cells: specificity and kinetics of binding to the mannose 6-phosphate receptor in vivo

543 **G. Schuler, H. Hintner, K. Wolff, P. Fritsch, and G. Stingl.** In vitro complement-binding on cytoplasmic structures in normal human skin: immunoelectronmicroscopic studies

552 **J. K. Hoober, D. B. Marks, B. J. Keller, and M. M. Margulies.** Regulation of accumulation of the major thylakoid polypeptides in *Chlamydomonas reinhardtii* y-1 at 25°C and 38°C

559 **A. Surprenant.** Correlation between electrical activity and ACTH/β-endorphin secretion in mouse pituitary tumor cells

567 **B. D. Shur and N. G. Hall.** Sperm surface galactosyltransferase activities during in vitro capacitation

574 **B. D. Shur and N. G. Hall.** A role for mouse sperm galactosyltransferases in sperm binding to the egg zona pellucida

580 **J. Woodcock-Mitchell, R. Eichner, W. G. Nelson, and T.-T. Sun.** Immunolocalization of keratin polypeptides in human epidermis using monoclonal antibodies

589 **M. A. Yamin and S. L. Tamm.** ATP reactivation of the rotary axostyle in termite flagellates: effects of dynein ATPase inhibitors

598 **D. R. Colman, G. Kreibich, A. B. Frey, and D. D. Sabatini.** Synthesis and incorporation of myelin polypeptides into CNS myelin

609 **N. J. Hutchison, P. R. Langer-Safer, D. C. Ward, and B. A. Hamkalo.** *In situ* hybridization at the electron microscope level: hybrid detection by autoradiography and colloidal gold

619 **L. Manuelidis, P. R. Langer-Safer, and D. C. Ward.** High-resolution mapping of satellite DNA using biotin-labeled DNA probes

626 **J. D. Zieske and I. A. Bernstein.** Modification of cell surface glycoprotein: addition of fucosyl residues during epidermal differentiation

632 **K. Ohmori, L. J. Fretto, R. L. Harrison, M. E. P. Switzer, H. P. Erickson, and P. A. McKee.** Electron microscopy of human factor VIII/von Willebrand glycoprotein: effect of reducing agents on structure and function

641 **J. M. Fitch, E. Gibney, R. D. Sanderson, R. Mayne, and T. F. Linsenmayer.** Domain and basement membrane specificity of a monoclonal antibody against chicken type IV collagen

648 **R. A. Milligan and P. N. T. Unwin.** In vitro crystallization of ribosomes from chick embryos

654 **N. T. Neff, C. Lowrey, C. Decker, A. Tovar, C. Damsky, C. Buck, and A. F. Horwitz.** A monoclonal antibody detaches embryonic skeletal muscle from extracellular matrices

Rapid Communications

667 **J. P. Singh, M. A. Chaikin, and C. D. Stiles.** Phylogenetic analysis of platelet-derived growth factor by radio-receptor assay

672 **S. Ch. Papasozomenos, M. Yoon, R. Crane, L. Autilio-Gambetti, and P. Gambetti.** Redistribution of proteins of fast axonal transport following administration of β,β'-iminodipropionitrile: a quantitative autoradiographic study

676 **F. R. Maxfield.** Weak bases and ionophores rapidly and reversibly raise the pH of endocytic vesicles in cultured mouse fibroblasts.

VOLUME 95 NUMBER 2 PART 2 NOVEMBER 1982

Abstracts Twenty-second Annual Meeting of the American Society for Cell Biology

VOLUME 95 NUMBER 3 DECEMBER 1982

Perspectives

689 **S. D. Emr and T. J. Silhavy.** Molecular components of the signal sequence that function in the initiation of protein export

Regular Articles

697 **D. H. Carney and J. S. Bergmann.** ^{125}I-Thrombin binds to clustered receptors on noncoated regions of mouse embryo cell surfaces

704 **R. I. Wojtyk and S. Goldstein.** Clonal selection in cultured human fibroblasts: role of protein synthetic errors

711 **K. Yamamoto, J. D. Pardee, J. Reidler, L. Stryer, and J. A. Spudich.** Mechanism of interaction of *Dictyostelium* severin with actin filaments

720 **P. J. Roberts, A. R. Cross, O. T. G. Jones, and A. W. Segal.** Development of cytochrome b_{-245} and an active oxidase system in association with maturation of a human promyelocytic (HL-60) cell line

727 **V. Iwanij, B. E. Hull, and J. D. Jamieson.** Structural characterization of a rat acinar cell tumor

734 **V. Iwanij and J. D. Jamieson.** Biochemical analysis of secretory proteins synthesized by normal rat pancreas and by pancreatic acinar tumor cells

742 **V. Iwanij and J. D. Jamieson.** Comparison of secretory protein profiles in developing rat pancreatic rudiments and rat acinar tumor cells

747 **B. D. Goldberg.** Binding of soluble type I collagen to fibroblasts: effects of thermal activation of ligand, ligand concentration, pinocytosis, and cytoskeletal modifiers

752 **B. D. Goldberg and R. E. Burgeson.** Binding of soluble Type I collagen to fibroblasts: specificities for native collagen types, triple helical structure, telopeptides, propeptides, and cyanogen bromide-derived peptides

757 **J. A. Olson and A. Kilejian.** Involvement of spectrin and ATP in infection of resealed erythrocyte ghosts by the human malarial parasite, *Plasmodium falciparum*

763 **D. Bader, T. Masaki, and D. A. Fischman.** Immunochemical analysis of myosin heavy chain during avian myogenesis in vivo and in vitro

771 **G. A. Nelson, M. L. Andrews, and M. J. Karnovsky.** Participation of calmodulin in immunoglobulin capping

781 **G. Griffiths, R. Brands, B. Burke, D. Louvard, and G. Warren.** Viral membrane proteins acquire galactose in *trans* Golgi cisternae during intracellular transport

793 **L. Y. W. Bourguignon, M. L. Nagpal, K. Balazovich, V. Guerriero, and A. R. Means.** Association of myosin light chain kinase with lymphocyte membrane–cytoskeleton complex

798 **U. W. Goodenough and J. E. Heuser.** Substructure of the outer dynein arm

816 **T. D. Pollard.** Structure and polymerization of *Acanthamoeba* myosin-II filaments

826 **L. Gerace, Y. Ottaviano, and C. Kondor-Koch.** Identification of the nuclear pore complex

838 **L. Gorza, S. Sartore, and S. Schiaffino.** Myosin types and fiber types in cardiac muscle. II. Atrial myocardium

846 **L. S. Barak and W. W. Webb.** Diffusion of low density lipoprotein-receptor complex on human fibroblasts

853 **D. R. Burgess.** Reactivation of intestinal epithelial cell brush border motility. ATP-Dependent contraction via a terminal web contractile ring

864 **S. Matsuura, H. Nakada, T. Sawamura, and Y. Tashiro.** Distribution of an asialoglycoprotein receptor on rat hepatocyte cell surface

876 **N. Oppenheimer-Marks and F. Grinnell.** Inhibition of fibronectin receptor function by antibodies against BHK cell wheat germ agglutinin receptors

885 **S. Linder, S. H. Zuckerman, and N. R. Ringertz.** Pattern of chick gene activation in chick erythrocyte heterokaryons

893 **R. L. Satter, R. C. Garber, L. Khairallah, and Y.-S. Cheng.** Elemental analysis of freeze-dried thin sections of *Samanea* motor organs: barriers to ion diffusion through the apoplast.

903 **S. D. Freedman and J. D. Jamieson.** Hormone-induced protein phosphorylation. I. Relationship between secretagogue action and endogenous protein phosphorylation in intact cells from the exocrine pancreas and parotid

909 **S. D. Freedman and J. D. Jamieson.** Hormone-induced protein phosphorylation. II. Localization to the ribosomal fraction from rat exocrine pancreas and parotid of a 29,000-dalton protein phosphorylated in situ in response to secretagogues

918 **S. D. Freedman and J. D. Jamieson.** Hormone-induced protein phosphorylation. III. Regulation of the phosphorylation of the secretagogue-responsive 29,000-dalton protein by both Ca^{2+} and cAMP in vitro

924 **G. S. Kopf, G. W. Moy, and V. D. Vacquier.** Isolation and characterization of sea urchin egg cortical granules

933 **J. M. Robinson, M. L. Karnovsky, and M. J. Karnovsky.** Glycogen accumulation in polymorphonuclear leukocytes, and other intracellular alterations that occur during inflammation

943 **T. C. S. Keller III and M. S. Mooseker.** Ca^{++}-Calmodulin-dependent phosphorylation of myosin and its role in brush border contraction in vitro

960 **S. E. Malawista and A. De Boisfleury Chevance.** Cytokineplast: purified, stable, and functional motile machinery from human blood polymorphonuclear leukocytes

974 **J. L. Gross, D. Moscatelli, E. A. Jaffe, and D. B. Rifkin.** Plasminogen activator and collagenase production by cultured capillary endothelial cells

982 **J.-F. Leterrier, R. K. H. Liem, and M. L. Shelanski.** Interaction between neurofilament and microtubule-associated protein: a possible mechanism for intraorganellar bridging

Rapid Communications

987 **C. Cohen, B. Reinhardt, L. Castellani, P. Norton, and M. Stirewalt.** Schistosome surface spines are "crystals" of actin

989 **P. Cancalon.** Slow flow in axons detached from their perikarya

983 Acknowledgement of the Reviewers

995 Authors' Index for Volume 95

1001 Placement Service Notices